CLAIMS

1. A synchroniser for use in a receiver which receives signals, said synchroniser comprising:

means for providing a digital control signal, said control signal defining a plurality of different levels;

means for controlling the level provided by successive ones of said control signals, successive ones of said control signal defining different values; and

means for estimating the difference between the levels of successive ones of said control signals.

2. A synchroniser as claimed in claim 1 wherein said digital control signal is converted into an analogue control signal.

3. A synchroniser as claimed in claim 1 or 2, wherein said providing means, said controlling means and said estimating means are in the digital domain.

4. A synchroniser as claimed in claim 3, wherein said providing means, said controlling means and said estimating means are provided in a digital signal processor.

5. A synchroniser as claimed in any preceding claim, wherein said providing means comprises a digital corrector.

6. A synchroniser as claimed in any preceding claim, wherein a rough correction is provided by said control signal.

7. A synchroniser as claimed in claim 7, wherein said rough correction is provided in an analogue domain.

8. A synchroniser as claimed in claim 6 or 7, wherein a finer correction is provided.

9. A synchroniser as claimed in claim 8, wherein said finer correction is provided in a digital domain.

10. A synchroniser as claimed in any preceding claim, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a difference between the upper of said levels and a estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

11. A synchroniser as claimed in any preceding claim, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a difference between the upper of said levels and a estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

12. A synchroniser as claimed in any preceding claim, wherein said estimator is arranged to determine that an actual signal has changed if a difference between the upper of said levels and an actual signal provides a signal at substantially the same level as a signal provided by a difference between a lower of said levels and the actual signal, said same level being different to a previous level for said actual signal.

13. A synchroniser as claimed in any preceding claim, wherein said synchroniser is arranged to acquire and/or track frequency error.

14. A synchroniser as claimed in any preceding claim, wherein said synchroniser is arranged to acquire and/or track timing error.

15. A receiver comprising a synchroniser as claimed in any preceding claim.

16. A receiver as claimed in claim 15, wherein said control signal is used to control a mixing frequency.